

Title (en)

Method for manufacturing magnetic sensor, magnet array used in the method, and method for manufacturing the magnet array

Title (de)

Herstellungsverfahren eines Magnetsensors, in diesem Verfahren verwendete Magnetreihe und Herstellungsverfahren der Magnetreihe

Title (fr)

Procédé de fabrication d'un capteur magnétique, réseau magnétique utilisé dans ce procédé et procédé de fabrication du réseau magnétique

Publication

EP 1574870 A3 20100303 (EN)

Application

EP 05004046 A 20050224

Priority

JP 2004070927 A 20040312

Abstract (en)

[origin: EP1574870A2] A magnetic sensor (10) includes eight SAF-type GMR elements (11-14,21-24). Four of the GMR elements detect a magnetic field in the direction of the X-axis and are bridge-connected to thereby constitute an X-axis magnetic sensor. The other four GMR elements detect a magnetic field in the direction of the Y-axis and are bridge-connected to thereby constitute a Y-axis magnetic sensor. The magnetization of a pinned layer of each of the GMR elements is pinned in a fixed direction by means of a magnetic field that a permanent bar magnet inserted into a square portion of a yoke of a magnet array generates in the vicinity of a rectangular portion of the yoke. A magnetic field generated in the vicinity of a certain rectangular portion of the yoke differs in direction by 90 degrees from a magnetic field generated in the vicinity of a rectangular portion adjacent to the former rectangular portion.

IPC 8 full level

G01R 33/09 (2006.01); **H01L 43/02** (2006.01); **H01L 43/00** (2006.01); **H01L 43/08** (2006.01); **H01L 43/12** (2006.01)

CPC (source: EP KR US)

B82Y 25/00 (2013.01 - EP US); **G01R 33/093** (2013.01 - EP US); **H10N 50/10** (2023.02 - KR); **Y10T 29/49002** (2015.01 - EP US); **Y10T 29/49021** (2015.01 - EP US)

Citation (search report)

- [Y] US 2002142490 A1 20021003 - SATO HIDEKI [JP], et al
- [Y] WO 9415223 A1 19940707 - SIEMENS AG [DE], et al

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CN112530835A; US7589939B2; EP2696210A4; EP2696209A4; US7906961B2; US7842334B2; US10908233B2; US9664754B2; WO2007071383A3; CN102790613A; EP2682773A4; EP3385740A4; EP3385739A4

Designated contracting state (EPC)

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Designated extension state (EPC)

AL BA HR LV MK YU

DOCDB simple family (publication)

EP 1574870 A2 20050914; **EP 1574870 A3 20100303**; CN 100536188 C 20090902; CN 1694277 A 20051109; CN 2791885 Y 20060628; HK 1080605 A1 20060428; HK 1080605 B 20091231; JP 2005260064 A 20050922; JP 4557134 B2 20101006; KR 100627212 B1 20060925; KR 20060043874 A 20060515; TW 200604552 A 20060201; TW I293372 B 20080211; US 2005200449 A1 20050915; US 7023310 B2 20060404

DOCDB simple family (application)

EP 05004046 A 20050224; CN 200510078866 A 20050311; CN 200520011883 U 20050311; HK 06100220 A 20060105; JP 2004070927 A 20040312; KR 20050020492 A 20050311; TW 94107366 A 20050310; US 7606905 A 20050310